

LIST OF CURRENT CLAIMS

1. (Currently Amended) Method for manufacturing plungers for medical syringes, ~~whereby such a~~ said plunger (3) ~~consists of comprising~~ at least two parts~~[[,]]~~ namely including a longitudinal plunger body (4) made of plastic and a piston body (5) provided at the front end of the plunger body, (4) which piston body comprises ~~consists of~~ a plastic which is softer than the plastic of the plunger body (4), wherein said ~~characterized in that such a~~ plunger (3), or at least a part of the plunger (36) thereof, is formed by first manufacturing the piston body (5) and then the plunger body (4), or at least a part (37) of the this plunger body (4), by means of injection moulding, and wherein ~~whereby~~ the plunger body (4), or said ~~the above-mentioned~~ part of the plunger body (37) thereof, is injected against the piston body (5), said piston body being formed such that the front side and side wall thereof are free of any flash lines and/or, such that the front side and side wall thereof are free of gate points for the plastic.

Claim 2 (Canceled)

3. (Currently Amended) Method according to claim 1 ~~or 2~~, wherein ~~characterised in that~~ the piston body (5) and the plunger body (4), or said ~~the aforesaid~~ part of the plunger body (37) thereof, are connected solely by the ~~sole~~ adhesion between the plastics out of which they are made, ~~in particular~~ without any meshing parts, counter drafts or the like being ~~realised~~ formed thereby.

4. (Currently Amended) Method according to claim 1 ~~or 2~~, wherein ~~characterised in that~~ at least one inwardly directed part, ~~such as a collar (10), a part defining a counter draft or the like~~, is formed on the piston body (5), as and use is made during the injection moulding of a mould part (12) ~~with~~ having a protruding part (25) in which one or several lateral recesses (25A) are ~~laterally~~ provided and/or a protruding part having one side forming ~~to form the aforesaid~~ a counter draft, such that the ~~whereby; as the above-mentioned~~ mould part (12) is may be removed from the piston body due to (5); ~~use is made of~~ the elastic flexibility of the material of this the piston body (5), to

~~thereby enable in order to pull~~ the protruding part to be pulled (25) from the formed piston body (5).

5. (Currently Amended) Method according to claim 1, wherein ~~any of the preceding claims, characterised in that~~ the plastic for forming the piston body (5) is provided in a respective the mould cavity impression (16) concerned via a the back side of the piston body (5) to be formed.

6. (Currently Amended) Method according to claim 1, wherein ~~any of the preceding claims, characterised in that~~ the piston body (5) is formed in a first mould cavity impression (16), after which ~~this the~~ piston body (5), while it is still being held in a the first mould cavity impression (16) or a part thereof, is presented to a second mould cavity impression (17) in which the plunger body (4), or the ~~above-mentioned part of the plunger body~~ (37) thereof, is then injected against the piston body (5) by means of injection moulding, and wherein whereby mould cavities impressions (16-17) are applied used having such a shape that the resulting obtained plunger body (4) or the ~~above-mentioned part of the plunger body~~ (37) thereof, and the piston body (5) are connected to ~~one another thanks~~ each other due to their shape and/or ~~thanks to the~~ adhesion between the plastics.

7. (Currently Amended) Method according to claim 6, wherein ~~characterised in that,~~ while the plunger body (4) or the ~~above-mentioned of the plunger body part~~ (37) thereof is formed such that it connects to the piston body (5), a subsequent piston body (5) is simultaneously being formed by means of a connector ~~the same~~ nozzle (34) with which the first piston body (5) is formed realised, but in another mould cavity impression.

8. (Currently Amended) Method according to claim 1, wherein ~~any of the preceding claims, characterised in that~~ the piston body (5) is formed in a mould with mould parts (12-13) whose partial surface mainly coincides with ~~the a~~ rear side of the piston body (5) to be formed or extends parallel thereto, after which ~~the a~~ mould part (12) with the piston body (5) provided in it is presented against other mould parts (14-15) in which the plunger body (4) or the ~~aforesaid part~~ (37) thereof of the plunger body is formed.

9. (Currently Amended) Method according to claim 1, wherein ~~any of the preceding claims, characterised in that~~ when forming the ~~realising such a~~ plunger (3) or a part of the plunger (36) thereof, also an accessory is also ~~also~~ formed which is located ~~situated~~ with at least a part thereof on the a front side of the piston body (5), and which comprises ~~consists of~~ a material which is different from the material of the piston body (5).

10. (Currently Amended) Method according to claim 9, wherein ~~characterised in that~~ the material of the accessory comprises ~~consists of~~ a plastic which is harder than the plastic out of which the piston body (5) is formed.

11. (Currently Amended) Method according to claim 9 or 10, wherein the ~~characterised in that the above-mentioned~~ accessory comprises ~~consists of~~ a part (48) which extends frontally from the a front side of the piston body (5) and which, when the plunger (3) is situated in the syringe (1), can at least partially penetrate in the an ~~an~~ outlet (45) of the syringe (1), in order to be able to optimally empty the syringe (1).

12. (Currently Amended) Method according to claim 9 ~~any of claims 9 or 10, characterised in that the aforesaid~~ wherein the accessory comprises ~~consists of~~ a part which enables creation of ~~makes it possible to create~~ a passage between the a front side and the a rear side of the piston body (5) when emptying the syringe (1) in order to prevent the syringe (1) from being re-used.

13. (Currently Amended) Method according to claim 9, wherein the ~~any of claims 9 to 12, characterised in that the above-mentioned~~ accessory can be made in a shape selected from ~~in any of the following shapes~~:

- as a part made in one piece with the plunger body or said (4) ~~of the above-mentioned part of the plunger body (37) thereof~~, and thus formed simultaneously with the plunger body or part thereof it during the injection moulding;
- as a separate part provided on the a front side of the piston body (5);

- as a separate part provided on the a front side of the piston body (5), ~~whereby this~~ wherein such separate part is injected against the material of the piston body (5) after ~~the~~ this piston body (5) has been formed.

14. (Currently Amended) Method according to claim 1 wherein, ~~any of the preceding claims, characterised in that~~, in the case where only a part (37) of the plunger body (4) is injected against the piston body (5), ~~this~~ such plunger body part (37) is made as an insert, whereby ~~which makes it is~~ possible to provide for a connection with the rest of the plunger body (4) at a later stage.

15. (Currently Amended) Method according to claim 1, wherein ~~any of the preceding claims, characterised in that~~, instead of being used for manufacturing plungers (3) with a longitudinal plunger body (4), ~~they are~~ the method is used for manufacturing plungers of the type ~~which is meant~~ intended to be used in combination with a drive element, ~~whereby~~ wherein each such a plunger then comprises ~~mainly consists of~~ a piston body (5) and a plunger part, such that the ~~whereby this~~ plunger part is configured fit to co-operate with such a drive element.

16. (Currently Amended) Method for manufacturing plungers for medical syringes having comprising at least a piston body (5), ~~characterised in that~~ comprising forming a part of the piston body (48) ~~is formed~~ at the location height of the piston body (5) which protrudes frontally from a ~~the~~ front side of the piston body (5) and which, when the plunger (3) is located situated in the a syringe (1), can penetrate at least partially through an ~~in the~~ outlet (45) of the syringe (1), ~~whereby this~~ wherein said piston body part (48) is formed of a material which is different from, ~~and preferably harder than~~ the material of the piston body (5), and wherein ~~whereby~~ the materials forming the piston body (5) on the one hand and the aforesaid protruding part (48) on the other hand are injected against one another, ~~whereby the above-mentioned part (48) may or may not~~ such that said piston body ~~can either or not~~ be made in one piece with a plunger body (4) belonging to the plunger (3).

17. (Currently Amended) Device for applying the method according to claim 1, comprising any of claims 1 to 15, characterised in that it at least consists of a number of mould parts (12-13-14-15) defining at least a first mould cavity impression (16) and a second mould cavity impression (17) for forming the piston body (5) and the plunger body (4) respectively, or a part (37) of the plunger body, respectively (4); a motion mechanism enabling movement of the ~~which makes it possible to move the above-mentioned~~ mould parts (12-13-14-15) in relation to one another and to position them differently so that, in a first position, the piston body (5) can be injected, and whereas in a second position, the plunger body (4) or the plunger body aforesaid part (37) thereof can be injected against the piston body (5); and an injection device arranged means to supply the plastic to be injected to the aforesaid mould impressions cavities, wherein in the first position, the partial surface of the mould parts that form the mould cavity of the piston body coincide with a rear side of said piston body (12-13-14-15) respectively.

18. (Currently Amended) Device according to claim 17, wherein characterised in that the first mould impression (16) cavity is mainly situated in a single mould part (13) and in that the motion device comprises ~~mechanism consists of~~ a mechanism with which said first mould part (13) with the mould cavity impression (16) provided in it can be moved between at least two positions, namely a first position whereat the ~~whereby this~~ mould cavity impression (16) is mainly sealed and is connected to a first nozzle (34) for injecting a first plastic on the one hand, and a second position whereat the ~~whereby this~~ mould ~~impression (16)~~ cavity connects to the second mould cavity, such that impression (17) and whereby the latter is connected to a second nozzle (35) for injecting a second plastic, on the other hand.

19. (Currently Amended) Device according to claim 18, comprising characterised in that it comprises two or more first several mould impressions (16) cavities configured for the formation of piston bodies (5) which are situated such that one of these first mould cavities impressions (16) can work in conjunction with the first nozzle (34), while another one of the first these mould impressions (16) cavities is simultaneously being presented to the second mould cavity impression (17), and wherein in that the motion

~~device mechanism~~ moves the first mould cavities impressions (16) in such a manner that the first mould cavities impressions (16) are systematically and repeatedly presented to ~~each time~~ the first nozzle (34) and the second mould cavity impression (17).

20. (Currently Amended) Device according to claim 17, wherein ~~any of claims 17 to 19;~~ characterised in that the motion device comprises ~~mechanism~~ is a rotating indexing mechanism (32), whose axis of rotation (33-33A) has extends in a direction which is different from the direction or directions of movement according to which the mould parts (12-13-14-15) which are required to form the aforesaid mould cavities impressions (16-17) open and close.

21. (Currently Amended) Device according to claim 17, wherein ~~any of claims 17 to 20;~~ characterised in that the injection device comprises ~~means comprise~~ two nozzles (34-35) for injecting two plastics respectively, and in that both nozzles (34-35) are provided in one and the same mould part or in one and the same whole, comprising ~~consisting~~ of rigidly connected mould parts (12-14).

22. (Currently Amended) Device according to claim 17, wherein ~~any of claims 17 to 21;~~ characterised in that the injection device comprises ~~means comprise~~ two nozzles (34-35), for injecting two plastics respectively, and in that both nozzles (34-35) open into in parallel land areas of the respective mould parts (12-14) concerned.

23. (Currently Amended) Device according to claim 17, wherein ~~any of claims 17 to 22;~~ characterised in that the mould cavities impressions (16-17) are formed of mould parts (12-13-14-15) which together define three partial surfaces, namely ~~in other words~~ surfaces whose mould impressions (16-17) cavities open and close, and wherein the ~~in that these~~ partial surfaces are disposed ~~mainly situated~~ step-like in relation to each other.

24. (Currently Amended) Device according to claim 17, wherein the ~~any of claims 17 to 23;~~ characterised in that it consists of a composed mould; ~~which mainly comprises~~

three mold parts (~~18-19-20~~) which can be mutually moved, including a first mold part (~~18~~) and a second mold part (~~19~~) respectively, which can be put placed against each other ~~one another~~ by means of a translation movement, or can be moved away from ~~one another respectively~~ each other, and a third mold part (~~20~~) which can be moved between at least two positions, namely a first position in which ~~this~~ the third mold part (~~20~~) at least co-operates with the first mold part (~~18~~) in order to define the first mould ~~impression (16)~~ cavity, on the one hand, and a second position in which a third mold part (~~20~~) at least co-operates with the first mold part (~~18~~) as well as the second mold part (~~19~~) in order to define the second cavity mould ~~impression (17)~~, such that the second mold cavity opens ~~latter connects to the~~ a part of the plunger (~~3~~) formed in the first mould cavity ~~impression (16)~~.

25. (Currently Amended) Device according to claim 24, wherein ~~characterised in that~~ the third mold part (~~20~~) ~~can be rotated~~ is rotatable and can also be translated ~~make a translation movement (T3)~~ in relation to the first mold part (~~18~~) and the second mold part (~~19~~) in order to facilitate ~~provide for~~ the opening and sealing of the mould cavities ~~impressions (16-17)~~ concerned.

26. (Currently Amended) Device according to claim 24, wherein ~~or 25, characterised in that~~ the second mold part (~~19~~) and third mold part (~~20~~) are mounted on a common support (~~22~~), such that they can be mutually moved, which support ~~can~~ may be mutually moved in turn in relation to the first mold part (~~18~~).

27. (Currently Amended) Syringe for medical purposes, comprising ~~characterised in that it comprises a plunger of which at least a part has been~~ formed ~~realised~~ according to the method of claim 1 ~~any of claims 1 to 16~~.

28. (Currently Amended) Syringe for medical purposes, comprising at least a cylinder body (~~2~~) with an outlet (~~45~~) which is formed of a narrowed outlet part (~~46~~), as well as a plunger (~~3~~) working in conjunction with the cylinder body (~~2~~) which is provided with a piston body (~~5~~) and a plunger body (~~4~~), ~~characterised in that~~ wherein the plunger (~~3~~) comprises a plunger part (~~48~~) which protrudes frontally from the front side of the piston

body (5) and which can penetrate at least partially through said ~~in the above-mentioned~~ outlet part (46), wherein the plunger part ~~whereby this part (48)~~ is formed of a material which is different from the material of the piston body (5), ~~and preferably consists of a plastic which is harder than the material out of which the piston body (5) is formed.~~

29. (Currently Amended) Syringe according to claim 28, wherein ~~characterised in that~~ the plunger ~~above-mentioned~~ part (48) which protrudes frontally from the front side of the piston body (5) ~~is made according to~~ comprises either of the following two possibilities:

- ~~as~~ a part made in one piece with the plunger body (4) or made in one piece with a part (37) of ~~this~~ the plunger body (4);
- ~~as~~ a separate part ~~situated~~ disposed on the piston body (5).

30. (New) The syringe as claimed in claim 28, wherein the plastic forming the plunger part is harder than the plastic forming the piston body.